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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/008,901	12/07/2001	Perry F. Renshaw	04843-033001 / MCL 1779.1	7202

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EXAMINER	
SHARAREH, SHAHNAM J	

ART UNIT	PAPER NUMBER
1617	7

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Offic Action Summary	Application No. 10/008,901	Applicant(s) RENSHAW ET AL.	
	Examiner Shahnam Sharareh	Art Unit 1617	

-- The MAILING DATE of this communication appears on the cover sheet with th corresp ndence address --

Period f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/2001, 8/2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-25 and 27-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-25 and 27-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claims 21-25, 27-37 are pending.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 27, 34-37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

2. Claim 27 recites the term "membrane fluidity disorder," which is not defined in the specification. Accordingly, the metes and bounds of the claim is not clear.

3. Claims 34-37 respectively recite the limitations "candidate psychiatric drug," "candidate neurological drug," "known psychiatric drug" and "known neurological drug." The metes and bounds of such limitations are not clear as they are directed to a descriptive and/or relative property of a drug. Any drug can potentially have psychiatric or neurological side effects, so are they encompassed within the above recited limitations? Specification further does not adequately provide for the metes and bound of such limitation. Accordingly, the metes and bounds of the claims are not clear.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 21-24, 27-28, 30-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Fishman US Patent 5,357,959.

The instant claims are directed to methods of assessing a subject's treatment by acquiring a baseline first MRI scan of the brain, administering a drug, and then acquire a second, post-treatment scan of the brain to observe the differences in the first and second brain scan.

Fishman anticipates the limitations of the instant claims because it inherently meets all the instantly claimed process steps. Examiner points out that Fishman is directed to methods of obtaining MRI imaging. By the virtue of performing MRI imaging, the medical device of Fishman measures the T1 and T2. The terms T1 indicates the time it takes for equilibrium to be attained again (relaxation) and the loss of energy by the nuclei in question to nearby matter. T2 relates to magnetic spins being different than those around them. Further, the measurement of T1 and T2 are done by employing spin echo, saturation recovery and inversion recovery radiofrequency pulses. (see col 3, lines 29-col 4, line 5). Fishman employs his methods on a human subject (see examples 3-4). Therefore, Fishman meets the process steps of claim 21-23, 31-33.

Fishman employs a gas mixture of krypton, xenon, helium, and/or carbon dioxide which alters cerebral physiology contrast agent (col 10, lines 3-37; claims 13-19). The limitation of "neurological treatment" encompasses the administration of such agent because such agents alter cerebral physiology and thus impacts neurological behavior. Fishman also states the use of his methodology to evaluate cerebral blood flow and brain function in patients with Alzheimer, Parkinson. Fishman specifically states the use

of his methodology for evaluation and impact of drug therapy. (see col 11, lines 40-51). Thus, the limitations of claim 27-30 are also met.

5. Claims 21-23, 27, 31-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Carter US Patent 5,258,369.

As argued in the previous rejection, performing MRI imaging on a patient inherently, provides for measurements proton relaxation known as T1, and T2. Carter teaches methods of treating patients with a dsRNA theapy and monitoring such therapy by employing repeated MRI scan. Carter further discloses that in his methods he has repeated MRI scans to assess the persistence of the brain lesions following his dsRNA therapy. (col 3, lines 1-10). Therefore, Carter's methods anticipate the limitations of the instant claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 21-25, 27-28, 30-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fishman US Patent 5,357,959.

The teachings of Fishman are described above. Fishman teaches methods of using noble gases in MRI imaging. Fishman fails to specifically recite the use of a pre-treatment challenge to establish a baseline for ultimate comparison.

Applicant is informed that during patent application prosecution, the claims are viewed given their broadest reasonable interpretation consistent with the specification. With respect to claim 25, Examiner states that the recitation of pre-treatment challenge does not exclude any normal physiological activity of subject patients. Accordingly, breathing or even eating food is viewed as a pre-treatment challenge that alters a physical or chemical property of cell membrane in the brain of a subject, because it allows for elemental activity or absorption of nutrients into the brain cell. Since, Fishman's patients are live human patients, they are subject to a pre-treatment challenge. Accordingly, obtaining an MRI scan following the administration of contrast

agent of Fishman is the same as the instant MRI image following a pre-treatment challenge. Moreover, Fishman specifically states the use of such methodology to evaluate the impact of a therapy of interest (col 11, lines 45-50).

Thus, it would have been obvious to one of ordinary skill in the art at the time of invention to rechallenge the subjects of Fishman with a drug therapy of choice for Alzheimer or Parkinson's to observe the positive or negative impact of the therapy on the patient. Accordingly, the ordinary skill in the art would have had are reasonable expectation of success to observe a decrease in T2 time if the therapy is actually effective.

7. Claims 21-25, 27-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fishman as applied to claims 21-25, 27-28, 30-37 above, and further in view of Albert et al US Patent 5,785,953.

Fishman does not teach methods of assessing progress of therapy in patients with bipolar disorder.

Albert teaches the use of noble gases in MRI imaging. Albert uses hyperpolarized gases. (see abstract, claims 1-5, 18, 27, 36-39). Albert further teaches that such gas can be used to make huge contribution in optimizing the progress in patients suffering from depression and bipolar illnesses (col 17, lines 55-col 18, line 5).

Albert and Fishman both teach methods of assessing pateint's therapy by employing MRI imaging, therefore, their teachings are in the same field of endeavor.

Although Fishman does not provide for assessing the therapeutic progress in bipolar patient's undergoing therapy, it would have been obvious to one of ordinary skill

in the art at the time of invention to also employ his methods for patients suffering from a biopolar disorder, because as suggested by Albert, MRI scanning of brain would have provided detail information about the therapeutic progress of such patients.

Conclusion

8. No claims are allowed. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shahnam Sharareh whose telephone number is 703-306-5400. The examiner can normally be reached on 8:30 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreenivasan Padmanabhan, PhD can be reached on 703-308-1877. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1123.

RUSSELL TRAVERS
PRIMARY EXAMINER

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